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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,966	09/06/2001	Larry Neil Mackey	U 013595-2	6640
27752	7590	07/02/2004	EXAMINER	
THE PROCTER & GAMBLE COMPANY INTELLECTUAL PROPERTY DIVISION WINTON HILL TECHNICAL CENTER - BOX 161 6110 CENTER HILL AVENUE CINCINNATI, OH 45224			JUSKA, CHERYL ANN	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/914,966	Applicant(s) MACKEY ET AL.	
	Examiner Cheryl Juska	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-18 and 20-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 and 20-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/04, 03/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

2. Applicant's amendment, originally filed March 18, 2004, as an after final amendment, is now entered due to applicant's request for continued examination. Claims 11, 29, and 30 have been amended, while claim 19 has been cancelled. Thus, the pending claims are 11-18 and 20-30.

3. Said amendment is sufficient to withdraw the prior art rejections set forth in the final rejection. However, new 112 and prior art rejections are set forth below.

Information Disclosure Statement

4. The information disclosure statement filed March 12, 2004, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been

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placed in the application file, but the three non-English references referred to therein have not been considered.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 11-19 and 20-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a starch fiber including a plasticizer and cross-linking agent, does not reasonably provide enablement for a starch fiber having a T_g of at least about -30°C . The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Independent claims 11, 29, and 30 are drawn to a fiber, a paper product, and a fibrous structure, respectively, comprising starch having a size of about 0.02-5 dtex and a T_g of at least about -30°C . The specification does not provide enablement for one ordinary skill the art that is reasonably commensurate in scope with the degree of protection sought by the claims. There is absolutely no teaching or suggestion in the specification that a starch fiber having the claimed glass transition temperature can be made without the use of a plasticizer and/or cross-linking agent. It is the examiner's view that this defines "undue experimentation" with respect to the enablement requirement of 35 U.S.C. 5 112, first paragraph. See *In re Wands*, 8 USPQ2d 1400.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 11, 20-26, 29, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 11, 20-26, 29, and 30 are indefinite for claiming the starch fiber in terms of property (i.e., T_g) rather than the chemical and structural features that would produce said property. *Ex parte Slob*, 157 USPQ 172, states the following with regard to an article claimed by defining property values:

Claims merely setting forth physical characteristics desired in article, and not setting forth specific compositions which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in future and which would impart desired characteristics; thus, expression "a liquefiable substance having a liquefaction temperature from about 40°C. to about 300°C and being compatible with the ingredients in the powdered detergent composition" is too broad and indefinite since it purports to cover everything which will perform the desired functions regardless of its composition, and, in effect, recites compounds by what it is desired that they do rather than what they are; expression also is too broad since it appears to read upon materials that could not possibly be used to accomplish purposes intended.

10. The claims fail to reasonably apprise one of ordinary skill in the art of the scope of the claimed invention and are, therefore, in violation of 35 U.S.C. 5 112, second paragraph. While there is no doubt that the recited glass transition temperature can be readily measured for a given material by one of ordinary skill in the art, the claims do not reasonably define a composition upon which such measurement is to be made. The claims encompass all future starch fibers that have the claimed denier and glass transition temperature, but applicant has only invented one particular starch fiber composition. "Reciting the physical and chemical characteristics of the claimed product will not suffice where it is not certain that a sufficient number of characteristics

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have been recited that the claim reads only on the particular compound which applicant has invented.” *Ex parte Siddiqui*, 156 USPQ 426, *Ex parte Davission et al.*, 133 USPQ 400, *Ex parte Fox*, 128 USPQ 1 57. In the instant case, the claims are not sufficiently described in terms of structure and/or composition to clearly identify the actual invention.

11. Claims 12-18, 27, and 28 are also rejected under 112, 2nd for their dependency upon claims 11 and 20.

Claim Rejections - 35 USC § 102/103

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 11-13, 15-18, 20-27, 29, and 30 are rejected under 35 USC 102(b) as being anticipated by, or in the alternative under 35 USC 103(a) as being unpatentable over US 4,243,480 issued to Hernandez et al.

Hernandez teaches starch fibers suited for replacing pulp fibers in making paper (abstract). The fibers have diameters in the range of 10-500 microns (col. 7, lines 7-11) and contain 50% by weight or more of starch (claim 1, col. 21, lines 65-67). The starch fiber may

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include additives such as a plasticizer and a cross-linking agent in amounts of less than 50% by weight of the total solids (col. 9, lines 22-67). Said cross-linking agent may be urea-formaldehyde, glyoxal, or urea-melamine-formaldehyde resins (col. 9, lines 51-58). The starch fibers can be made into a paper product having a basis weight within the range presently claimed (Tables I, II, V, and XI).

Thus, Hernandez teaches the presently claimed invention with the exception of (a) the fiber size and (b) the glass transition temperature. With respect to former, it is noted that without knowing the density of the starch fiber, the linear density of Hernandez's fiber cannot be directly calculated. However, it is asserted that Hernandez's teaching of a fiber diameter range 10-500 microns would inherently include a starch fiber size within the range of about 0.02-5 dtex. Support for said assertion is found in the explicit teaching of fiber diameter and the use of said fiber for paper products. Further support is found in applicant's own teaching of an inventive fiber having a diameter of 70-90 microns (specification, page 29, lines 28-29). The burden is upon applicant to prove otherwise.

With respect to the latter, it is reasonable to presume the claimed glass transition temperature is inherent to the fiber of Hernandez. Support for said presumption is found in the use of like materials (i.e., starch fiber with plasticizer and cross-linking agent) and the use of like processes (i.e., extruding starch to form a fine fiber suitable for use in paper products). The burden is upon applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 495. In the alternative, the claimed glass transition temperature would obviously have been provided by the invention disclosed by Hernandez. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35

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USC 102. Therefore, claims 11-13, 15-18, 20, 27, 29, and 30 are rejected as being anticipated by or obvious over Hernandez.

With respect to claims 21-26, Hernandez does not explicitly teach the claimed properties of the fibrous structure. However, it is reasonable to presume the claimed properties are inherent to the paper product of Hernandez. Support for said presumption is found in the use of like materials (i.e., starch fiber with plasticizer and cross-linking agent) and the use of like processes (i.e., forming a paper product having a like basis weight). The burden is upon applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 495. In the alternative, the claimed glass transition temperature would obviously have been provided by the invention disclosed by Hernandez. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102. Therefore, claims 21-26 are rejected also.

Claim Rejections - 35 USC § 103

15. Claim 14 is rejected under 35 USC 103(a) as being unpatentable over the cited Hernandez reference in view of US 5,516,815 issued to Buehler et al.

Hernandez teaches the addition of a plasticizer to the starch fiber, but fails to explicitly teach suitable plasticizers. As such, one must look to the prior art to select a suitable plasticizer. For example, Buehler teaches a starch fiber having a plasticizer such as sorbitol, mannitol, ethylene glycol, and polyethylene glycol. Thus, it would have been obvious to one skilled in the art to employ the claimed plasticizers since Hernandez's lack of a teaching to suitable

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plasticizers must lead one to other prior art, such as Buehler. Therefore, claim 14 is rejected as being obvious over the cited prior art.

16. Claim 28 is rejected under 35 USC 103(a) as being unpatentable over the cited Hernandez reference.

With respect to claim 28, Hernandez does not explicitly teach the claimed apparent density of the paper products. However, it would have been obvious to one skilled in the art to produce a fibrous structure according to the Hernandez invention having the presently claimed density since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, claim 28 is rejected.

Conclusion

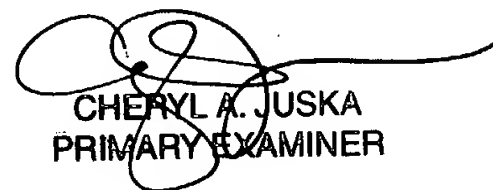
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Juska whose telephone number is 571-272-1477. The examiner can normally be reached on Monday-Friday 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached at 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CHERYL A. JUSKA
PRIMARY EXAMINER